## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

## (19) World Intellectual Property Organization International Bureau





(43) International Publication Date 6 October 2005 (06.10.2005)

PCT

(10) International Publication Number WO 2005/092038 A2

(51) International Patent Classification: Not classified

(21) International Application Number:

PCT/US2005/009391

(22) International Filing Date: 22 March 2005 (22.03.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/555,167 60/619,817 22 March 2004 (22.03.2004) US 18 October 2004 (18.10.2004) US

(71) Applicant (for all designated States except US): THE JOHNS HOPKINS UNIVERSITY [US/US]; 3400 N. Charles Street, Baltimore, MD 21218 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): ESHLEMAN, James, R. [US/US]; 11703 Fallswood Terrace, Lutherville, MD 21093 (US). SHI, Chanjuan [US/US]. ESHLEMAN, Susan, Henrietta [US/US].

(74) Agents: CORLESS, Peter, F. et al.; Edwards & Angell, LLP, P.O. Box 55874, Boston, MA 02205 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

 without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHODS FOR THE DETECTION OF NUCLEIC ACID DIFFERENCES

(57) Abstract: The invention provides methods permiting the detection of small amounts of different nucleic acids in the presence of an excess amount of wild-type nucleic acids. Also provided herein are method so detecting infectious disease minority variants, methods of forensic identification, methods of diagnosing cancer and monitoring disease progress.